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泰国和越南藓类新纪录

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摘要 报道了越南藓类的 2 个新纪录，即：海南花锦藓 *Chionostomum hainanensis* Tan & Jia 和毛齿匍灯藓 *Plagiomnium tezukae*（Sak.）T. Kop.；泰国藓类的 3 个新纪录，即：糙叶梨果藓 *Mastopoma scabrifolium*（Broth.）Tan & T. Ninh，毛尖狗尾藓 *Rhaphidostichum piliferum*（Broth.）Broth.，细枝羽藓 *Thuidium delicatulum*（Hedw.）Mitt. 其中糙叶梨果藓为新组合。文中并讨论了与此相近的种群。

关键词 藓类，越南，泰国，印度支那，新加坡
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New Records for Thailand and Vietnam Moss Floras

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Abstract Two new records (*Chionostomum hainanensis* and *Plagiomnium tezukae*) of Vietnamese mosses and three new records (*Mastopoma scabrifolium*, *Rhaphidostichum piliferum* and *Thuidium delicatulum*) of Thailand mosses are reported. *Mastopoma scabrifolium* (Broth. in Moell.) B. C. Tan & Tran Ninh is proposed as a new combination.

Key words Moss, Vietnam, Thailand, Indochina, Singapore

Our 1996 moss collections from northern Vietnam and our study of duplicates of Thai mosses distributed recently by Missouri Botanical Garden (MO) have yielded new information representing significant range extension for a number of mosses in Vietnam and Thailand. The disputed Thai specimens are those deposited at FH and UBC while the reported Vietnamese collections are preserved at FH and HNU.

1. **Chionostomum hainanensis** B. C. Tan & Jia Yu [Northern Vietnam, Hoa Binh Province, summit of Bavi Mountain, on rock, ca 1300 m elev., B. C. Tan & Tran Ninh 96-2183, FH, NY, HNU].

Chionostomum is characterized among the sematophyllioid genera by its traceculate, yet smooth or non-striate outer peristome. A new species recently described by Tan and Jia (1998) from Hainan, China, *C. hainanensis*, was found among our Vietnamese moss collections. This species differs from the widespread *Chionostomum rostratum* in being larger

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and with longer capsules. The most important difference between the two taxa, however, lies in their alar organizations. In *C. hainanensis* , the alar region clearly consists of an excavate group of colored, quadrate and rectangular, thin to thick - walled cells, while the alar region of *C. rostratum* is non - excavate and consists of a basal row of 5 ~ 6 largely inflated and thin - walled cells. The 3 ~ 4 supra - alar cells are equally thin - walled, but much smaller in size. In fact, the illustration of *Chionostomum rostratum* in Chen (1978, fig. 354) represents a specimen of *C. hainanensis*.

Chionostomum baolocense Tix. from Vietnam differs from *C. rostratum* in having longer capsules and bearing a different alar structure with more than three rows of alar and supra - alar cells. This Vietnamese endemic may therefore be conspecific with our new species. However, the illustration of the alar region of *C. baolocense* in Tixier (1977, fig. 13: 3b) shows clearly an *Acroporium* - like alar organization, quite different from the alar organization seen in *C. hainanensis*. In addition, the leaves of *C. baolocensis* , like *C. rostratum* , measuring to only 2. 1 mm long, are smaller than the leaves of *C. hainanensis* .

2. **Neckeropsis fimbriata** (Harv.) Fleisch. [Thailand, Ko Kut, SW part along stream, Charroenphol, Larsen & Warncke 5121, det. as *Himantocladium loriforme*]

The large basal auricles of leaves of this species are very distinctive in the genus (Touw, 1962) and is not seen in any species of *Himantocladium* (Enroth, 1992). *Neckeropsis fimbriata* is a widespread Indochinese species.

3. **Mastopoma scabrifolium** (Broth. in Moell.) B. C. Tan & Tran Ninh, comb. nov. - Basionym: *Acanthocladium scabrifolium* Broth. in Moell., Hedwigia 60: 326. 1919. [Khao Yai National Park, Charoenphol. Larsen & Warncke 4243, 4327, both determined as *Rhaphidostichum luzonense*]. Figs. 1 ~ 6.

This Javan species (Moeller, 1919) was unjustly reduced to a synonym of *Trimegistia brauniana* (Bosch & Sande Lac.) Fleisch. by Fleischer (1915 ~ 1923) and had ' since been forgotten. We had the good opportunity to study the type of *Acanthocladium scabrifolium* preserved at H - BR. Although the overall morphology of *A. scabrifolium* looks like a slender *Trismegistia* , its single - toothed leaf border is only slightly differentiated and its leaf cells are strongly unipapillose, both characters are not matched by any known species of *Trismegistia*.

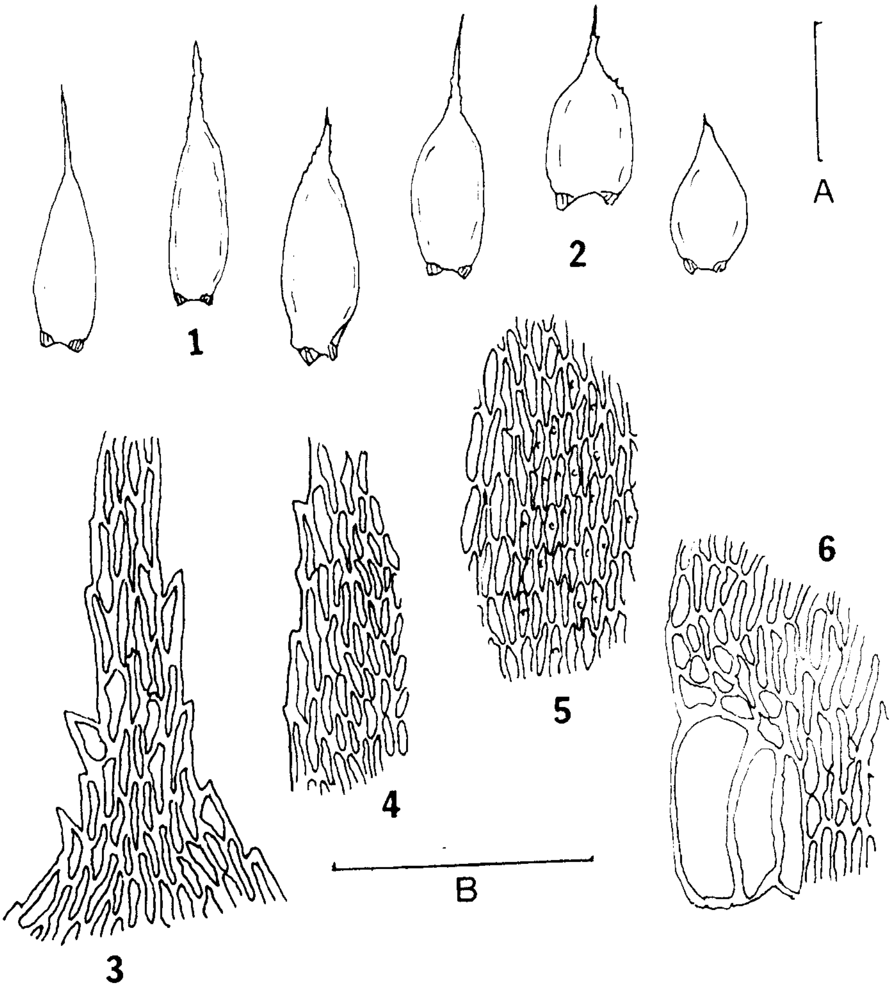
Acanthocladium scabrifolium was also considered to be a *Trichosteleum* [as *T. scabrifolium*] by Buck and Tan (1989). We think that it is better placed in *Mastopoma* Card. close to the *M. papillosum* Broth. from Borneo. *Mastopoma scabrifolium* differs form *M. papillosum* in having broadly ovate leaves and not oblong - lanceolate leaves as in the case of *M. papillosum* . In addition, *M. papillosum* has a strongly differentiated, often double - toothed leaf border.

Furthermore, *Mastopoma scabrifolium* exhibits a dimorphism between stem and branch leaf morphology. The stem leaves are broadly ovate and cuspidate while the branch leaves are lanceolate with acute to short acuminate apex. Compared to the type material, the Thai collection cited above has plentiful materials to show the variation of leaf morphology of this species. In contrast, *Rhaphidostichum luzonense* (Broth.) Broth. neither shows dimorphic stem and branch leaves, nor does it have papillose leaf cells.

Mastopoma scabrifolium is known previously from Jave and Malay Peninsula (cf. Mohamed *et al*, 1988). It is new to the Indochina region.

4. **Plagiomnium tezukae** (Sak.) T. Kop. [Northern Vietnam, Hoa Binh Province, Bavi Mountain, roadside ditch bank, shaded, at 2, 800 ft elev., B. C. Tan & Tran Ninh 96 - 2162, 96 - 2163].

According to Koponen (1994), *P. tezukae* is easily recognized from all other East Asiatic members of section Rusulata by its long ciliate marginal teeth which are formed by 1 ~ 4 uniseriate cells. Its leaf morphology closely resembles the European *P. affine* (Funck) Kop. and the North American *P. ciliare* (C. Muell.) Kop. The Vietnamese plants collected by us are ca 3 cm tall, robust, with erect stems covered thickly with reddish rhizoids and forming large cushion. The leaf border cells are often short rectangular.



Figs. 1 ~ 6. *Mastopoma scabrifolium* (Broth.) Tan & Tran Ninh (based on Charoenphol, Larsen & Warncke 4243): 1 ~ 2. variation of stem and branch leaves; 3. upper leaf cells near acumen; 4. upper leaf cells near margin; 5. median leaf cells; 6. alar cells. [A bar = 1 mm; B bar = 90 μm]

Plagiomnium tezukae is new to the Indochina region, although it is known previously from Japan, Korea, mainland China and Taiwan.

5. **Rhaphidostichum piliferum** (Broth.) Broth. [Thailand, Trend Camp near Pak Thong Chai, eastern part of Khao Yai National Park, Charoenphol, Larsen & Warncke 4501, det. as *R. bunodicarpum*]

Although the species has already been reported from the Philippines, Borneo, Kampuchea and Vietnam, *R. piliferum* is new to Thailand (cf. Tan and Iwatsuki, 1993). *Rhaphidostichum bunodicarpum* (C. Muell.) Fleisch. is a smaller plant with entire leaf margin and has a wider distribution from Malesia (Tan, 1993) to Oceania (Miller *et al*, 1978). In *R. piliferum*, a few small teeth are always present at the base of the much constricted leaf acumen of the otherwise entire leaf margin.

6. **Thuidium delicatulum** (Hedw.) Mitt. [Thailand, Khao Yai National Park, Khao Khieo, Charoenphol, Larsen &

Warncke 4246, det. as *Thuidium glaucinum*]

Thuidium delicatulum has been treated as a variety of *T. recognitum* (cf. Noguchi, 1987 - 1994; Crum *et al*, 1981). *Thuidium glaucinum* (Mitt.) Bosch & Sande Lac., a synonym of *T. pristocalyx* (C. Muell.) Jaeg. (Watanabe, 1991), is a smaller plant with regularly bipinnately branched stems (tripinnately branched in *T. delicatulum*). In addition, the single leaf cell papilla of *T. glaucinum* is stellar in morphology, very unlike the sharp leaf cell papilla of *T. delicatulum* . The other common species of *Thuidium* in Indochina with a single leaf cell papilla is *T. glaucinoides* Broth. The latter, however, is also a smaller plant with regularly bipinnate branches. The differences among these three species are discussed and illustrated in Watanabe (1972).

Surprisingly, *T. delicatulum* still has no previous record from Indochina. It is widespread in China, Japan, Siberia, Europe, North and South Americas.

7. **Trichosteleum boschii** (Dozy & Molk.) Jaeg. [Singapore, Bukit Timah Nature Reserve, on bark and on rock, E. Whitehouse 28128, 28162, both determined as *Trichosteleum luxurians*]

The specimens in question have lanceolate leaves with strongly unipapillose leaf cells. The leaf apices are acute to acuminate. On the other hand, *Trichosteleum luxurians* (Dozy & Molk.) Broth. has strongly concave, ovate leaves with a somewhat constricted leaf acumen that is obtuse to broadly acute. The equally unipapillose leaf cells of *T. luxurians* have strongly incrassate, pitted walls, very unlike the thick, non - pitted cell walls of *T. boschii* . Fleischer (1915 ~ 1923) who treated *Rhaphidostichum luxurians* (Dozy & Molk.) Fleisch. provided an excellent illustration for this taxon which Buck and Tan (1989) transferred subsequently to *Papillidiopsis* as *P. luxurians*.

Seki (1968) illustrated nicely the leaf variations of *T. boschii* , a widespread Malesian species long known to be in Singapore (Mohamed *et al*, 1988; Wee *et al*, 1995).

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